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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
ROBERTSON, DAVID	
ART UNIT	PAPER NUMBER
3623	

MAIL DATE	DELIVERY MODE
06/30/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/944,969	CHEN, KAY-YUT	
	Examiner	Art Unit	
	Dave Robertson	3623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 March 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This is a Non-final office action in response to Applicant's reply of 3/14/2008. Claims 1-23 are pending. This action is non-final due to new grounds of rejection entered under 35 USC § 101.

Response to Amendment

2. Applicant adds claims 22 and 23 further reciting steps for re-translating player definitions into modified scripts and executing the modified strips to produce new simulation results (behavioral outcome). These amendments are addressed in the rejections to follow.

Response to Arguments

3. Applicant's arguments filed 3/14/2008 have been fully considered but they are not persuasive:

4. Applicant notes that though not relied upon in the grounds of rejection to any of the claims, the cited article "Computer Games and Economics Experiments", HP Labs, November 2002 by authors Chen and Wu was published after the critical date of invention. However, as is clear from the passage, Chen and Wu, among other authorities, was cited as an authority only to demonstrate what was known in the art in teachings by others made earlier than Chen and Wu. However, the article is not required for the teaching and has been withdrawn as an authority.

5. Applicant argues Chaturvedi in view of Fischbacher and Sugges does not teach or fairly suggest translating player definitions defining a plurality of players and an associated set of rules into a codified script. (Remarks, pages 7-9). Applicant points out that the key innovation of the MUMS system was in its script language (Remarks, page 8) and then argues there is no hint provided anywhere in the references to establish that one of ordinary skill in the art would have been prompted to add modifiable scripting to economic simulation programs.

In response, Examiner asserts that the addition of old and well known scripting methods is precisely the purpose and application of the prior art, in which it is shown that scripting was old and well known to simulation including business and economic simulation. Suggess teaches very early recognition in the art of simulating business behavior using computerized games to assess economic impact and behavioral outcomes of players under different business policies and Fischbacker discloses a script-based, customizable, and interactive computerized economic/business gaming tool, the improvement to Chaturvedi motivated by providing a well known means to change the "operating functionality at run-time", i.e. customizability, thereby realizing the "highly re-configurable" software environment (column 7 from line 55) as envisioned by Chaturvedi. The programming method of providing customizable scripts to change the simulation according to new inputs and characteristics was known at the time of invention.

6. Accordingly, the grounds of rejection over all claims as in the prior office action are maintained.

Claim Rejections - 35 USC § 101

7. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

8. Claims 1-9, 18-21 and 23 are rejected under 35 U.S.C. 101 based on Supreme Court precedent, and recent Federal Circuit decisions. For a process to be patentable subject matter under § 101 the process must (1) be tied to another statutory class of invention (such as a particular apparatus) or (2) transform subject matter to a different state or thing. See Diamond v. Diehr, 450 US 175, 184 (1981); Parker v Flook, 437 US 584, 588 n9 (1978); Gottschalk v. Benson, 409 U.S. 63, 70 (1972); Cochrane v. Deener, 94 US 780, 787-88 (1876). If neither of these requirements is met by the claim, the method is not a patent eligible process. To qualify under § 101 as a statutory process, the claim should positively recite the other statutory class (the thing or product) to which it is tied, for example by identifying the apparatus that accomplishes the method steps, or positively recite the subject matter that is being transformed, for example by identifying the material that is being changed to a different state.

In the present case, none of the claims positively tie any of the steps of the recited process to any statutory class, such as a particular apparatus for performing any the steps of the claimed method. The claims encompass steps of the method being performed (or executed) by hand. As such the claims are nonstatutory.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 1-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chaturvedi et al (with Richard White, "Synthetic Economies: The Application of Distributed Interactive Computing Environments for Policy and Management Decision Making", Institute for Defense Analysis, September 1997, hereinafter “Chaturvedi/IDA”; with Mehta, “Simulations in economics and management. Communication of the ACM, March 1999, hereinafter “Chaturvedi/ACM”) and further in view of Honarvar et al (US 6,405,173), Sugges (“The Use of Computerized Business Games to Simulate business Behavior Under Different Policies”, IEEE Winter Simulation Conference, 1979), and Fischbacker (“z-Tree--Zurich Toolbox for Readymade Economic Experiments - Experimenter's Manual”, Institute for Empirical Research in Economics, University of Zurich, September 1999).

Chaturvedi (/ACM and /IDA) disclose the SEAS (Synthetic Economy for Analysis and Simulation) methods and system developed at Purdue University for interactive modeling and simulation of business policy management and economic behavior, mimicking real-time markets in a laboratory simulation populated by agents human and artificial. Examiner notes that Chaturvedi is a named inventor on the patent to Mehta et al (US Pat. 6,931,365) as cited and previous applied but disqualified by Applicant’s most

recently filed Declaration under 37 CFR 1.131. *Mehta et al* refers expressly to a "synthetic environment for analysis and simulation," with claims directed to such; however, Mehta et al does not explicitly, by name, reference the work of "SEAS". However the strong correlation between the "SEAS" literature cited herein, and the disclosure by Mehta et al, there is not sufficient evidence in the patent or application file to construe Mehta et al as a detailed "product description" of the earlier disclosed SEAS synthetic environment for analysis and simulation system.

Honarvar discloses automated methods for simulation and analysis of economic outcomes of management decisions to improve profitability and maximize customer value, including analysis and simulation of policy decisions for financial services, telephone utility companies, banks, and other business types.

Sugges teaches early recognition in the art for simulating business behavior using computerized games to assess economic impact and behavioral outcomes of players under different business policies and Fischbacker discloses a script-based, customizable, and interactive computerized economic/business gaming tool.

Specifically, with respect to the claims of the instant application:

Claim 1

Chaturvedi teaches defining a plurality of players including an associated set of rules defining a possible decision space (/ACM, page 60: "buyers, sellers, regulators…"); an information set (/ACM, page 60: "customizing the database"); an outcome function and a payoff function which determine the economic impact of the business policies defined by the rules (/IDA, Appendix A); however, Chaturvedi does not

expressly teach rules for players defined by a decision-making process tree; nor does Chaturvedi expressly teach executing the simulation using a scripting language.

It was old and well known in the art of computer programming, specifically logic programming for automated decision-making making systems, to use decision-trees to define rules, the familiar if-then-else programming construct being a form of a decision-tree definition of a rule. Honarvar teaches player (client) rules defined by decision trees (see Figures 6 and 10 and related discussion) defining client strategies for the business simulation. It would have been obvious to one of ordinary skill in the art at the time of the invention to define rules for players using such means as the decision-tree, readily programmable with a familiar programming construct as this would have provided a flexible and readily programmable means for defining simple or arbitrarily complex rules for the defined players of the economic simulation.

It was also old and well known in the art of computer programming, specifically in the art of programming for automated economic games simulation, to use a scripting language to define and execute the simulation. Scripting languages generally, have long been known to provide adaptability and ease of implementation for programmers in highly dynamic and customizable programming environments (see page 71, "Script Doctoring" and "Ultimate Adaptability", by Jepsen, "How Programming Languages Evolve", IT Pro, November/December, 1999).

Specifically in the art of the present invention, Sugges teaches computerized *business* games used as a research tool to determine how businesses respond to corporate and governmental policies in the context of economies, and Fischbacker

teaches the use of a scripting language in a customizable, interactive computerized business game. It would have been obvious to one of ordinary skill in the art at the time of the invention to implement Chaturvedi as a scripted simulation using the suggestion of Sugges and Fischbacker, as this would have provided a well known means to change the "operating functionality at run-time", i.e. customizability, thereby realizing the "highly re-configurable" software environment (column 7 from line 55) envisioned by Chaturvedi.

Claims 2 and 3

Chaturvedi teaches a simulation environment for humans and/or automated agents and, as with the present disclosure, does not restrict its use to exclusively human players (/ACM, page 60).

Claim 4

Chaturvedi teaches modifying the set of rules for one or more players and teaches or suggests repeating steps b) to c) (of the method of claim 1 as above).

Claim 5

Chaturvedi teaches providing calibration data for defined players based on empirical sales information (/ACM, page 60, "calibrating the artificial agents' [the defined players] parameters to match that of the real consumers" implying a calibration from empirical sales information based on consumers).

Claim 6

Chaturvedi teaches a plurality of scenarios defining variations on the set of rules associated with the one or more players (), and generating scripts corresponding to the player definition variations.

Claim 7 and 8

In view of the discussion of scripts above for claim 1, Chaturvedi teaches or suggests dynamically assembled simulations based on participant's profiles or on demand, thereby also suggesting "on-the-fly execution" (i.e. interpreted) scripts.

Claim 9

Chaturvedi expressly teaches rules associated with at least one players defining at least one business policy.

Claims 10-17 recite automated apparatus for carrying out the methods of claims 1-9 and are thus similarly rejected for reasons given above.

Claims 18 -20

Chaturvedi teaches or suggests the elements of claim 1 recited in claim 18 as described above for claim 1, and further Chaturvedi teaches a method of evaluating the actions of a human player within a decision environment with other human and/or automated players, inherently determining the players behavioral outcome (the player's actions) resulting from execution of the "codified script", the outcome measured by costs, profits, etc, i.e. economic states.

Claim 21

Chaturvedi teaches providing calibration data for defined players based on historical data and producing calibration data based on the historical data, wherein the codified script is translated from the definitions and the calibration data (see /ACM, page 60).

Claims 22 and 23 further recite steps of retranslating player definitions into modified scripts and executing the modified strips. Chaturvedi does not expressly teach modifying the player definitions, retranslating, and determining another behavioral outcome. However, these steps recite merely the effect of re-running a simulation with new players (a new plurality of players implies modified player definitions). It would have been obvious to one of ordinary skill in the art at the time of the invention that to run a new simulation with new set of players, one would perform the equivalent of retranslating player definitions into modified scripts and executing the modified strips, thereby executing the new simulation with the current players of the economic game.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dave Robertson whose telephone number is (571)272-8220. The examiner can normally be reached on 9 am to 5 pm, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Beth Van Doren can be reached on (571) 272-6737. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dave Robertson/
Examiner, Art Unit 3623

/Beth Van Doren/
Supervisory Patent Examiner, Art Unit 3623